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A New Subtribe of Pselaphid Beetles from California

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The following account is a contribution to the pselaphid fauna of the Nearctic Region. It is concerned with a new subtribe, a new genus, and two new species from northern California in the tribe Euplectini *sensu latiore*.

Trisignina new subtribe

Type of subtribe: *Trisignis* new genus

Euplectini having the following combination of diagnostic characters: (1) Head neither dilated laterally, nor produced apically, nor narrowed posteriorly to form a cephalic peduncle. (2) Eyes visible from above. (3) Antennae eleven-segmented, not geniculate, with last three segments forming the antennal club. (4) Prosternum medianly longitudinally divided by a carina. (5) Mesocoxae contiguous in confluent coxal cavities. (6) Metacoxae contiguous. (7) Tarsi three-segmented, the first segment small, the last two elongate, the third tarsal segment bearing two claws, a long primary claw and a distinct accessory claw.

Trisignis new genus

Genotype : *Trisignis marshi* new species

Trisignina having the following combination of diagnostic characters : (1) Vertex with a pair of foveae between the eyes, these foveae connected by an entire interfoveal sulcus. (2) Ventral surface of head with long capitulate setae. (3) Pronotal disc bisected by a sulcus ; a pair of lateral antebasal foveae connected by a transverse interfoveal impression ; base bisected by a median longitudinal carina. (4) Each elytron quadrifoveate at base, with entire sutural stria, no discal stria, and with flank bearing a subhumeral fovea. (5) Abdomen with five visible tergites and seven visible sternites in both sexes.

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Trisignis marshi new species

Figures 1-6

Type Male. Yellowish brown, with shining punctulate integuments except for lateroposterior faces of antennal tubercles and base of pronotum which are subgranulate. General body pubescence moderately abundant and quite conspicuous. Body length 1.8 mm. long and greatest width (through elytra) 0.7 mm.

Head rounded trapezoidal, with eyes, of about 42 facets, at center of head length ; vertex with a pair of nude, perforate foveae between the eyes ; these vertexal foveae united by an entire interfoveal sulcoid impression that extends distally between the antennal tubercles ; antennal tubercles moderately developed, with posterolateral face of each subgranulate cervicum bisected dorsally by a carina that extends over occipital area, this latter broadly concave ; face simple ; ventral surface of head with a poorly developed median longitudinal carina and provided with abundant, elongate, bristling, lengthily capitulate setae ; under high magnification these capitulations are seen as a cluster of divergent setoid processes.

Maxillary palpi four-segmented ; first segment minute, elongate ; second elongate, arcuate, pedunculate with the distal end rather suddenly enlarged ; third subtriangular, about as wide as distal part of second ; fourth largest, elongate oviform with a small distal palpal cone.

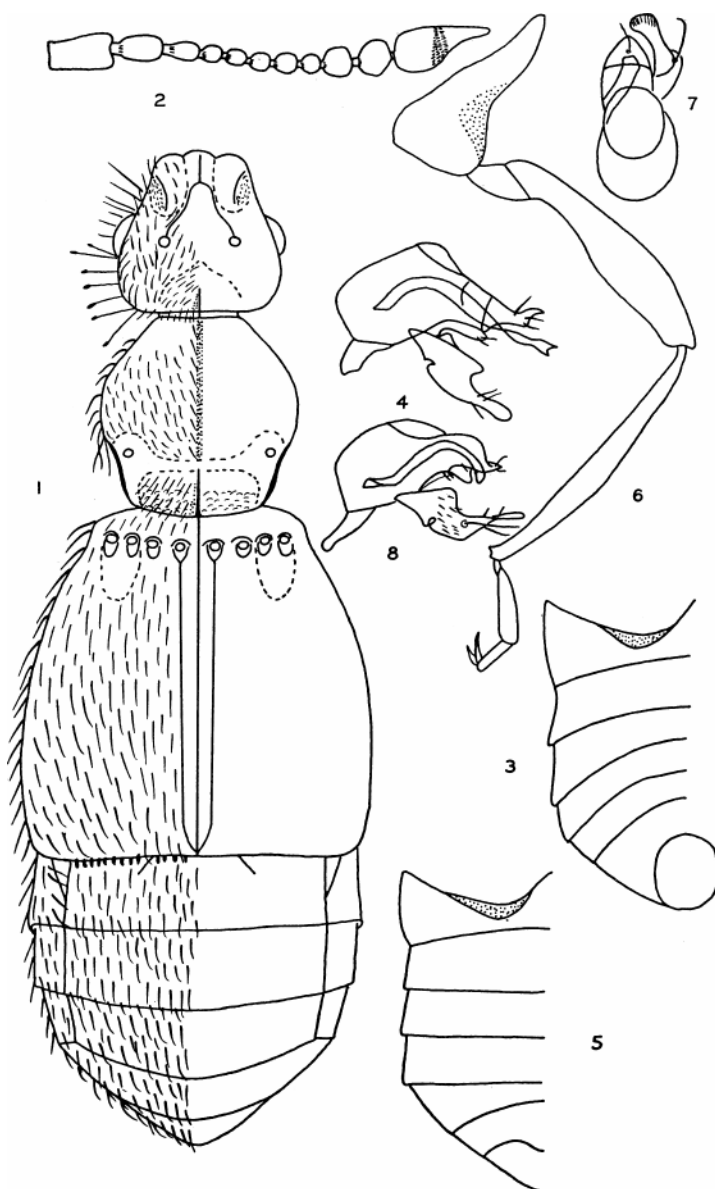
Antennae eleven-segmented, distantly articulated from each other ; first two segments large, third elongate, the club formed of the last three segments, the antennal segments with proportions as illustrated (Fig. 2) . Distal segment largest, rather clearly organized in two regions, a basal portion which is subhemispherical and a much narrower elongate conical portion. Antennal cones obvious, arising on the distal rim of the basal portion.

Trisignis marshi new species, x 70.

1. Dorsal aspect, paratype male.
2. Right antenna of type male, Hoyer slide mount.
3. Venter of paratype male.
4. Aedeagus of type, left lateral aspect, internal sac extruded, Hoyer slide mount.
5. Venter of paratype female.
6. Right metaleg of type male, Hoyer slide mount.

Trisignis hel feri new species, x 70.

7. Aedeagus of type, dorsal view, Hoyer slide mount.
8. Aedeagus of type, left lateral aspect, internal sac withdrawn, Hoyer slide mount.



Pronotum with the disc bisected by a median longitudinal sulcus, this sulcus shallow and subentire ; a nude, perforate antebasal fovea each side, visible from above, and connected by a broad shallow transverse impression ; base bisected by a high median longitudinal carina, and lateral to this carina the posterior areas are subgranulate ; lateral pronotal margins with pubescence longer than on disc, the margin simple, carinoid and blackened in basal third.

Pronotum bisected by a strong, median, longitudinal carina.

Elytra with rather prominent, rounded humeri ; each elytron at base quadrifoveate, the foveae nude, each fovea within an arcuate elytral ridge, and at base of a short foveal impression, the two most lateral foveae also surrounded by a common shallow impression for basal fifth ; sutural stria entire ; discal stria absent ; flank bearing a nude subhumeral fovea ; apical margin with a row of short squamoid setae.

Metawings present.

Abdomen with five visible tergites, the first three of which have well-developed lateral margins, and the first tergite bearing a pair of very divergent, straight basal abdominal carinae as illustrated (Fig. 1) , and second tergite with a pair of very short, faint basal abdominal carinae. Seven sternites with proportions as illustrated (Fig. 3) , the seventh in the form of a broadly rounded oval aedeageal plate.

Aedeagus (Fig. 4) 0.542 mm. long and 0.45 mm. high with the internal sac distally bifid.

Legs with brachysceline articulation. Mesocoxae contiguous in confluent coxal cavities. Metacoxae contiguous. Tarsi (Fig. 6) three-segmented, first segment small, second and third large, the third smaller than second and bearing a large primary tarsal claw and a distinct accessory tarsal claw. Profemora clavate, with ventral face flattened and roughened. Tibiae with a process at distal ventral face, that of meso-tibiae being relatively large and spinoid.

Female as described for male except that (1) the venter is slightly convex longitudinally instead of being slightly concave longitudinally as in the male ; (2) the seven visible sternites with different proportions than those of male (Fig. 5) ; (3) seventh sternite rounded triangular, distally subacute, very oblique ; (4) sixth sternite slightly produced at center of distal margin ; (5) profemora slightly less clavate, and the ventral face slightly less roughened ; (6) tibiae lacking the distal tooth.

Described on three specimens collected in northern California from deep floor mold of redwood litter by Berlese funnel extraction : Type male (Hoyer slide mount, including aedeagus) near Freshwater, Humboldt County, August 13, 1953, by G. A. Marsh, in whose honor this species is named, and R. O. Schuster ; paratype male and female 18 miles

south of Klamath, Del Norte County, September 19, 1953 by R. O. Schuster and E. E. Gilbert.

Type male deposited in the California Academy of Sciences ; paratype female in the California Insect Survey collection of the University of California; paratype male in the Park collection.

It is noteworthy that the female is subteneral, the integuments being light straw yellow, thin and semitransparent. It follows that September may be a pupation period for the species in the Klamath area.

Trisignis helferi new species

Figures 7-8

Type Male. Substantially as described for *Trisignis marshi* except for certain differences to be described. Both species are about the same size ; i.e., the median pronotal and elytral lengths are the same, both taken from type specimens mounted on slides, and the long metawings measure 2.5 mm. in both species.

Despite this general congruence in body proportions, the antennae of *helferi* are shorter and more slender than those of *marshi* in the ratio of 12 to 13 1/2. The posterior third of the lateral pronotal margins are almost entire in *marshi*, whereas these margins are obviously crenulate in *helferi*. The aedeagei are different throughout in small details. For example, the aedeagus of *helferi* is obviously smaller than that of *marshi*: the height of the median lobe in a ratio of 2.5 to 4 ; length of median lobe, from posterior margin to apex, in a ratio of 5 to 7.5, and the apical margin of the median lobe in *marshi* is asymmetrically arcuate in a narrow, rounded lobe whereas this margin is symmetrically acute oval in *helferi* (Fig. 7, 8).

There appears to be some variability in the form of the primary tarsal claw. This claw may be relatively broad and may bear a distinct ante-basal tooth, or this bifid condition may not be apparent. The mandibles are arcuate with six teeth on the internal ramus, of which the left distal tooth is the largest.

Female of helferi similar to the female of *marshi*.

Described on nine specimens, seven males and two females. They were obtained from floor mold by the Berlese funnel by J. R. Helfer, in whose honor this species is named. All nine specimens are from Mendocino County, California as follows: type (March 7, 1954) and one paratype male (July 29, 1954) are from near Caspar ; five males and two female paratypes are from near Mendocino (November 25, 1954) .

Type and one male paratype are deposited in the California Academy of Sciences. Two male and one female paratypes are deposited in the

California Insect Survey collection of the University of California. Three male and one female paratypes deposited in the Park collection.

Trisignis is a remarkable genus of euplectine pselaphids. The tarsal claws and contiguous mesocoxae ally it to the subtribe Trogastrina, whereas the contiguous mesocoxae in conjunction with the longitudinally carinate prosternum ally it to the subtribe Bibloporina. The structure of the distal antennal segment is more bibloporine than trogastrine. The seven visible sternites in both male and female sex, together with the well-developed tarsal claws, mesocoxae and prosternum warrant separation in a new subtribe, the Trisignina.

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